Committee on Resources

Witness Statement

U.S. House Committee on Resources Oversite Hearing
"Compromising our national security by restricting domestic
exploration & development of our oil and gas resources."
Written Testimony of Monica T. Surprenant
April 12,2000

Thank you for the opportunity to address this Committee on this very important topic. In your invitation you indicated interest in testimony as to my "experience with offshore oil and gas development, specifically the use of new technology to minimize environmental impacts". I offer the following comments in response to your request.

The search for and conservation of oil and gas resources has been one of the most important cornerstones in the United States' march to being the most powerful nation in the world. Starting on shore, we soon moved to the lakes and marshes and then the bays. From these beginnings, we have unfailingly worked our way out to ever increasing depths in the Gulf of Mexico to help satisfy this nations needs for energy. We have developed technologies to meet our particular environmental situations and we have adapted others which we found useful for increasing our ability to find and produce those resources. We have in turn brought these technologies to virtually every corner of the world to both feed the worlds energy needs and to meet the challenge of producing petroleum products wherever they may be found.

First let me describe the scope of the effort from a management standpoint.

As of the end of December 1999, there were 7526 active federal leases in the Gulf of Mexico. Of these, 1,507 were producing. The MMS Gulf of Mexico Regional Office conducts all leasing and resource management functions on the Outer Continental Shelf (OCS) for the Gulf of Mexico OCS Region and Atlantic OCS area. The OCS consists of submerged Federal lands off our coasts. The OCS has the potential to supply a significant portion of this Nations future energy and non-energy mineral needs. MMS leases these Federal offshore areas for exploration and production and closely monitors OCS operations to protect our coastal environments and ensure proper royalty collection. As well as meeting major energy needs, MMS provides about $6 billion in annual revenue benefits to the Nation. The deepwater portion of Gulf of Mexico has shown a remarkable increase in oil and gas exploration, development and production. In part this is due to the development of new technologies reducing operational costs and risks, as well as the finding of reservoirs with high production wells. There are about 90 announced Gulf deepwater prospects--the Gulf operators have been setting and surpassing records in water depth and length using new and improved proven technology. The GOM Region is responsible for administering more than 7,000 active leases covering more than 39 million offshore acres, where some 35,400 personnel work offshore on over 3,850 producing and 200 drilling facilities for some 160 qualified operators. The Region regards the safety of personnel, of the environment, and of operations as top priorities. The Nation's record for safe and clean offshore natural gas and oil operations is excellent. And to maintain and improve upon this excellent record, MMS continually seeks operational improvements that will reduce the risks to offshore personnel and to the

environment. MMS constantly re-evaluates its procedures and regulations to stay abreast of technological advances that will ensure safe and clean operations, as well as to increase awareness of their importance. Prevention is our most important safety strategy. MMS's approach to prevention has four mayor program components: the Technology Assessment and Research Program: an extensive offshore personnel training program; a regulatory program, which includes approval of plans, facilities, and operations, and an inspection of those facilities and operations; and accident investigations. Accidents reported to the MMS may trigger an investigation by the MMS district office in which the incident occurred. In the case of a major accident' MMS may create an investigative panel of district, regional, and headquarters personnel, as well as representatives of the U.S. Coast Guard and other Federal agencies including the National Transportation Safety Board. Findings from both types of investigations may lead to the issuance of safety alerts, technology assessment and research, changes in the training program. and/or improvements in the MMS regulatory program all of which further ensure safe and environmentally sound operations. Through these comprehensive programs MMS remains deeply committed to ensuring that safety is a prerequisite of all activity on the OCS, now- and in the fixture.

To demonstrate the technologies which are or can move us closer to self sufficiency in an environmentally responsible manner I would like to tell you about recent advances in deep water (For purposes here, deepwater is defined as 1,000 feet of water or greater.) drilling technologies utilized in the Gulf of Mexico which have expanded the limits of where we will be successful in finding and producing hydrocarbons.

The deepwater portion of Gulf of Mexico has shown a remarkable increase in oil and gas exploration, development and production. In part this is due to the development of new technologies reducing operational costs and risks as well as the finding of reservoirs with capable of high production of oil and gas resources. In 1996 MMS issued a report describing deepwater activities. There are about 90 announced Gulf deepwater prospects--the Gulf operators have been setting and surpassing records in water depth and length using new and improved technology.

Shell's subsea development named "Mensa" in Mississippi Canyon, Block 731 set two world records in July 1997--a world water depth record for production at 5,300 feet and a world record of 58 miles for tieback distance to its host platform in West Delta Block 143. Chevron U.S.A. set a then new world record water depth for drilling an exploratory well in August 1998 on Atwater Valley Block 118 in 7,718 feet of water. The block is located about 175 miles southeast of New Orleans. This eclipsed the previous record drilled in April 1996 in Alaminos Canyon Block 600 in 7,620 feet of water in the BAHA prospect, a joint venture owned by Shell, Amoco, Mobil, and Texaco. Many companies are poised to break the world record in the year 2000.

Deepwater drilling continues at a high pace in the Gulf; in November 1999, there were 32 (temporary and permanent) deepwater rigs simultaneously drilling in Gulf of Mexico water depths greater than 1,000 feet (305 meters). Examples of this concerted activity include, the"Ram-Powell" Tension Leg Platform (TLP), installed in May 1997 and holder of the previous Gulf water depth production record, is a Shell/Amoco/Exxon joint venture in 3,214 feet of water. Ram-Powell surpassed the 2,940-foot permanent drilling and production platform depth record set by Shell/BP on its "Mars" tension leg platform. In March 1999 Shell (and partners Exxon, BP, and Conoco) began production from another TLP for the "Ursa" project on Mississippi Canyon Block 809 in 3,916 feet of water. It also sends its subsea well production back to the HUB platform at West Delta 143.

Kerr McGee's Oryx3/CNG's "Neptune" SPAR platform, in Vioska Knoll Block 826 (1,930-foot waters), is another example of new platform technology used in Gulf production. It represents the world's first

production SPAR and was brought on production in 1997. A second SPAR system in the Gulf ("Genesis") was brought on production by Chevron U.S.A. (with Exxon and Fina) in 1998 on Green Canyon Block 205 in 2,597 feet of water. A third SPAR is in development by Exxon for its Diana Hoover prospect. Production is expected to commence in early 2000.

British-Borneo Exploration, Inc. has installed the world's first mini-TLP on Ewing Bank Block 965 in 1,700 feet of water on their "Morpeth" project. British-Borneo's mini-TLP was brought on production in 1998. Amerada Hess installed a compliant tower on its "Baldpate" project on Garden Banks Block 260 in 1,619 feet of water in 1998.

Production from Gulf deepwater reservoirs is also increasing. From 1994 through 1998 production of oil rose 260 percent to 159 million barrels in 1998. MMS expects deepwater natural gas and oil activities to continue to grow as operators explore and develop recently acquired and existing active leases. MMS's recent Lease Sales in 1996-98 are clear indications that industry is confident in the Gulf's deepwater resources. As technology advances and costs are reduced, deepwater development projects will become more feasible, allowing companies to venture more into ultradeep waters -exceeding 5,000 feet water depths.

We also have the technology and the ability to move the resources we recover here as well as those we will continue to import in an environmentally sound manner. As an example let me tell you about LOOP - the Louisiana Offshore Oil Port - LOOP is the world's first and only deepwater port operating under U. S. and Louisiana licenses. LOOP provides tanker offloading and temporary storage services for crude oil transported on some of the largest tankers in the world. Most tankers offloading at LOOP are too large for U.S. inland ports. Tankers offload at LOOP by pumping crude oil through hoses connected to a Single Point Mooring (SPM) base. Some of these vessels require water depths of 85 feet--the water depth at each of LOOP's SPMs is 115 feet. Three SPMs are located 8,000 feet from the Marine Terminal. The SPMs are designed to handle ships up to 700,000 deadweight tons. The SPMs are 21 feet in diameter, 46 feet high and are anchored to a seabed base with an anchor chain. Mooring lines connect the bow of a tanker to the buoy and flexible hoses are used to transport crude oil from the tanker to a submarine pipeline. The buoy and hoses can rotate a full 360 degrees allowing the tanker to maintain a heading of least resistance to wind and waves. The crude oil then moves to the Marine Terminal via a 56-inch diameter submarine pipeline. Its offshore marine terminal facilities are located 18 miles south of Grand Isle. It consists of a control platform and a pumping platform. The control platform is equipped with a helo pad, living quarters, control room, vessel traffic control station, offices and life support equipment. The pumping platform contains four 7,000-hp pumps, power generators, metering and laboratory facilities. Crude oil is only handled on the pumping platform where it is measure, sampled and boosted to shore via a 48-inch diameter pipeline. LOOP's onshore facilities, Fourchon Booster Station and Clovelly Dome Storage Terminal, are located just on-shore in Fourchon, LA and 25 miles inland near Galliano, LA. The Fourchon Booster Station has four 6,000-hp pumps which increases the pressure and crude oil flow en route to the Clovelly Dome Storage Terminal. The facility also supplies diesel fuel to LOOP's Marine Terminal via a 4-inch diameter pipeline. The Clovelly Dome Storage Terminal is used to store crude oil in underground salt caverns before it is shipped to the various refineries. The terminal consists of eight caverns with a total capacity of 40 million barrels, a pump station with four 6,000-hp pumps, meters to measure the crude oil receipts and deliveries, and a 25 million barrel Brine Storage Reservoir. In 15 years, LOOP has offloaded over 3.5 billion barrels of crude oil from over 3350 tankers. In 1995, LOOP handled over 250 million barrels, an estimated 685,000 barrels of oil per day, and is on pace to surpass that figure for 1996. LOOP is presently handling approximately 11% of all crude oil imports coming into the United States. Five connecting pipelines tie LOOP to over 30% of the United States refining capacity. Crude oil shipped through LOOP goes to refineries in Louisiana, Texas

and the mid-west. The handling of such large amounts of oil each day continues to be a significant benefit to Louisiana's economy. As I mentioned this has been done in an environmentally sound manner. There have been no major releases of hydrocarbons from the LOOP facilities to date.

Offshore oil and gas production has benefitted our environment in some ways. It has been recognized for some time that these structures begin to provide habitat for a large variety of highly sought after coastal fishes and other sea life almost as soon as they are put in place. These structures quickly become targeted destinations for anglers across the coast in search of sport and tasty fish. We have found a way, even after these structures have completed their useful life in the oil and gas industry to have them continue to provide habitat in the Gulf waters. The Louisiana Artificial Reef Program was established in 1986 to take advantage of obsolete oil and gas platforms which were recognized as providing habitat important to many of Louisiana's coastal fishes. Federal law and international treaty require these platforms to be removed one year after production ceases, at great expense to the industry. The removal of these platforms results in a loss of reef habitat. Louisiana's offshore oil and gas industry began in 1947 when the first well was drilled out of sight of land south of Terrebonne parish. Today over 4,500 offshore oil and gas platforms have been installed supplying 25% of the United States' production of natural gas and 10% of its oil. In addition to meeting the world's energy needs. these structures also form one of the world's most extensive defacto artificial reef systems. However, Federal regulations require that these structures be removed within 1 year after the lease is terminated. Disposal of obsolete offshore oil and gas structures is not only a net financial liability for private industry but can be a public loss of productive marine habitat. The Louisiana Fishing Enhancement Act was signed into law in 1986, creating the Louisiana Artificial Reef Program. this program was designed to take advantage of fishing opportunities provided by these obsolete platforms. Since the program's inception twenty-five reef sites utilizing the jackets of 85 obsolete platforms have been created off Louisiana's coast. The use of obsolete oil and gas platforms in Louisiana has proved to be highly successful. Their large numbers, design, longevity and stability have provided a number of advantages over the use of traditional artificial reef materials. The participating companies also save money by converting the structure into a reef rather than abandoning it onshore and are required to donate a portion of the savings to the state to run the state program. One disadvantage. however, is that their large size restricts the distance to shore where these platforms can be sited. To achieve the minimum clearance of 50 ft as required by the Coast Guard regulations, the platforms must be placed in waters in excess of 100 ft. Waters compatible with reef development are generally found between 30 and 70 miles off Louisiana's gently sloping continental shelf, making them accessible to anglers with offshore vessels. Funds generated by the program can be used to develop reefs closer to shore using alternative low profile materials. Oil and gas development in the Gulf of Mexico region has and will continue to contribute to the Gulf's position as the nation's most productive and popular offshore marine fishing zone.

Drilling and producing petroleum products safely in deepwater will require special attention by industry and the use of the most advanced training and management systems available. This section is meant only to highlight some concerns and efforts. It is not meant to be a complete and detailed discussion. One important advance, which has been an industry led effort, has been the issuance by the International Association of Drilling Contractors (IADC) of "Deepwater Well Control Guidelines." A companion effort to this is a recently issued Notice to Lessees - NTL 99-G01 ("Deepwater Emergency Well Control Operations") requiring operators to plan for well control emergencies and relief wells for all well related operations in water depths greater than 400 meters. MMS recently published a Safety Alert concerning strong deepwater currents in greater than 6,000 feet (see Safety Alert 180). MMS also continues to track concerns about the effect shallow water flows have on deepwater drilling and development projects. Known occurrences are plotted on maps that are periodically updated by MMS.

While we are anxious to develop our resources we have kept one eye on the prize and one eye on the environment. We respond to real environmental threats in measured degree appropriate to the level of threat. As an example, we have, at present, a moratorium on drilling in Lake Pontchartrain which resulted because of a real threat to the lake. We stand ready to review the decision for this moratorium based on any new evidence which bears on the ability to produce resources in an environmentally sound manner.

While we are certainly seeking to make exploration and production "spill-free", we also know that that is not going to be the case. In order then to make informed decisions about the environmental risks involved in the exploration for and development of petroleum resources let us look at information regarding releases of oil to the environment. There are numerous sources for this information. The National Response Center maintains what is probably the most complete set of data with reference to "spill" occurrences. In order to get good data on actual amounts released it is best to rely on Coast Guard and/or MMS data. MMS spill data in federal waters in the Gulf of Mexico for the period January-December 1999 indicate that 8404 gallons (191 bbls) were reported as having been released into the environment. A search query performed by the Louisiana Oil Spill Coordinator's Office (LOSCO) on a database of National Response Center data for offshore Louisiana indicated that there were 160 reported releases of "oil" between 1992 and 1998. Considering the amounts of hydrocarbon produced and transported through the Gulf of Mexico and Louisiana these figures represent a minuscule proportion of the total produced and/or transported.

No matter what equipment and what safeguards are put into place we are dealing with an industry in which human efforts, in frequently hostile environments, under dangerous physical conditions, are the only method we have to extract these resources. In response to this challenge, we developed the following two plans and included them in our tool box to deal with offshore spills. Our reasoning was that OCS spills had the potential to be large and OCS spills represent, in many ways, the hardest to deal with. They are remote. Most oil spill equipment is, at best, cumbersome and slow. Most of this equipment has been developed for inshore/land and/or shallow water use. OCS spills present unique challenges which require aggressive methods of response in order to preclude a threat to highly sensitive habitats. Far from shore, they represent logistical nightmares for many responders. Response equipment designed for calmer waters cannot operate effectively in open water conditions. Problems of travel times, storage of equipment and product recovered, transport of personnel and materials, as well as support for personnel make spills offshore most difficult to handle. To this end Louisiana and EPA Region 6 Regional Response Team have taken the unprecedented steps of pre-approving both the use of dispersants and in-situ burning as a means of attacking offshore spills.

Preapproval for dispersant use in oil spill response activities has been in effect since early 1995 for waters greater than 10 meters in depth or greater than, or equal to, 3 miles offshore.

Preapproval for in-situ burn in open water has been in effect since early 1994 for waters three miles or greater offshore, certain reefs excluded, and the area off Grand Isle excluded. In waters less than 3 miles offshore, incident specific approval is needed.

In closing I would like to reiterate several points.

We have a stable political environment in the U.S., relatively free from terrorism and/or sabotage which frees us to focus on the true technical difficulties of drilling safely wherever oil and gas reserves may be located.

We have a well trained work force which is ready and able to meet the challenges imposed by working

safely with some of the most dangerous machinery in use.

We have the technology to find and develop oil and gas reserves in very wide variety of habitats and under very demanding environmental conditions. We are constantly pushing the bounds of our technology and re-inventing it to meet new challenges. Chief among these is to produce these resources without degrading the environment by losing the product. After all, how much better off are we if we can get the product out of the field but not get it to the refineries. That is not good business or good conservation.

We have a very sophisticated and extensive network of agency and industry response teams and equipment to deal with any spills which occur within the gulf region. We have further enhanced our tool box for spill response by pre-approving the use of in-situ burning and/or dispersants, dependent upon the circumstances off the particular spill.

Based on our experience, we are convinced that oil and gas exploration can be conducted under acceptable environmental conditions.

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